

FY 1998 Proposed Rail Improvement Program Supplement



Illinois Department
of Transportation

**FISCAL YEAR 1998
PROPOSED RAIL IMPROVEMENT
PROGRAM SUPPLEMENT**

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PREFACE

This FY 1998 Proposed Rail Improvement Program Supplement contains those rail plan amendments which have been published subsequent to the FY 1997 Proposed Rail Improvement Program Supplement. This document also contains the benefit/cost methodology used to create the amendments.

TABLE OF CONTENTS

| | <u>Page</u> |
|---|-------------|
| <u>PREFACE</u> | i |
| <u>TABLE OF CONTENTS</u> | ii |
| <u>RAIL LINE ANALYSES</u> | |
| Granite City II | S-1 |
| Illinois International Port District | S-6 |
| Grand Prairie Coop, Inc. | S-11 |
| Allied Tube SMP Facility | S-16 |
| Granite City III | S-23 |
| Calumet | S-28 |
| | |
| <u>BENEFIT/COST METHODOLOGY</u> | 33 |
| | |
| <u>ILLINOIS RAILROADS AND ABBREVIATIONS</u> | 40 |
| | |
| <u>ILLINOIS RAILROAD MAP</u> | 41 |

LINE: At Granite City, Illinois
OWNER: Illinois Transit Assembly Corp.
OPERATOR: Terminal Railroad Association of St. Louis

PROBLEM STATEMENT

Illinois Transit Assembly Corp. (ITA), a company that refurbishes passenger railroad cars, is relocating and expanding its operation. The ITA plans to construct five new tracks, rehabilitate existing trackage, and purchase a building for its rail facility. The ITA will ship inbound and outbound passenger railroad cars via the Terminal Railroad Association of St. Louis (TRRA). This analysis determines whether the benefits of a publicly financed rail project, funded by the state's Rail Freight Assistance Program, exceed the project's estimated costs.

BACKGROUND

The ITA, currently located in Edwardsville, Illinois, is totally rail dependent. Passenger rail cars are shipped by rail to ITA for refurbishing and shipped out from ITA via the Union Pacific Railroad Company (UP). With the planned relocation to Granite City, the ITA will expand its railcar re-manufacturing operation from 30 to 60 passenger cars per year and double its staff to handle the extra work. This relocation was motivated in part by the possible abandonment of the Union Pacific Railroad Company's De Camp-Edwardsville Line, Docket No. AB-33 (Sub-No. 96), Notice of Intent to Abandon and Discontinue Service (1995). The abandonment is contingent upon the successful merger application of the Union Pacific Railroad Company and Southern Pacific Transportation Company, Finance Docket No. 32760, currently pending before the Surface Transportation Board of the U.S. Department of Transportation. Since the only feasible transportation mode for ITA's traffic is rail, the existing Edwardsville facility would be closed if the merger application is approved.

LOCATION

The proposed project is located in the southwest portion of Madison County, in Granite City, Illinois on the North side of 22nd Street and east of the TRRA. The project location and limits are shown in Figures 1 and 2.

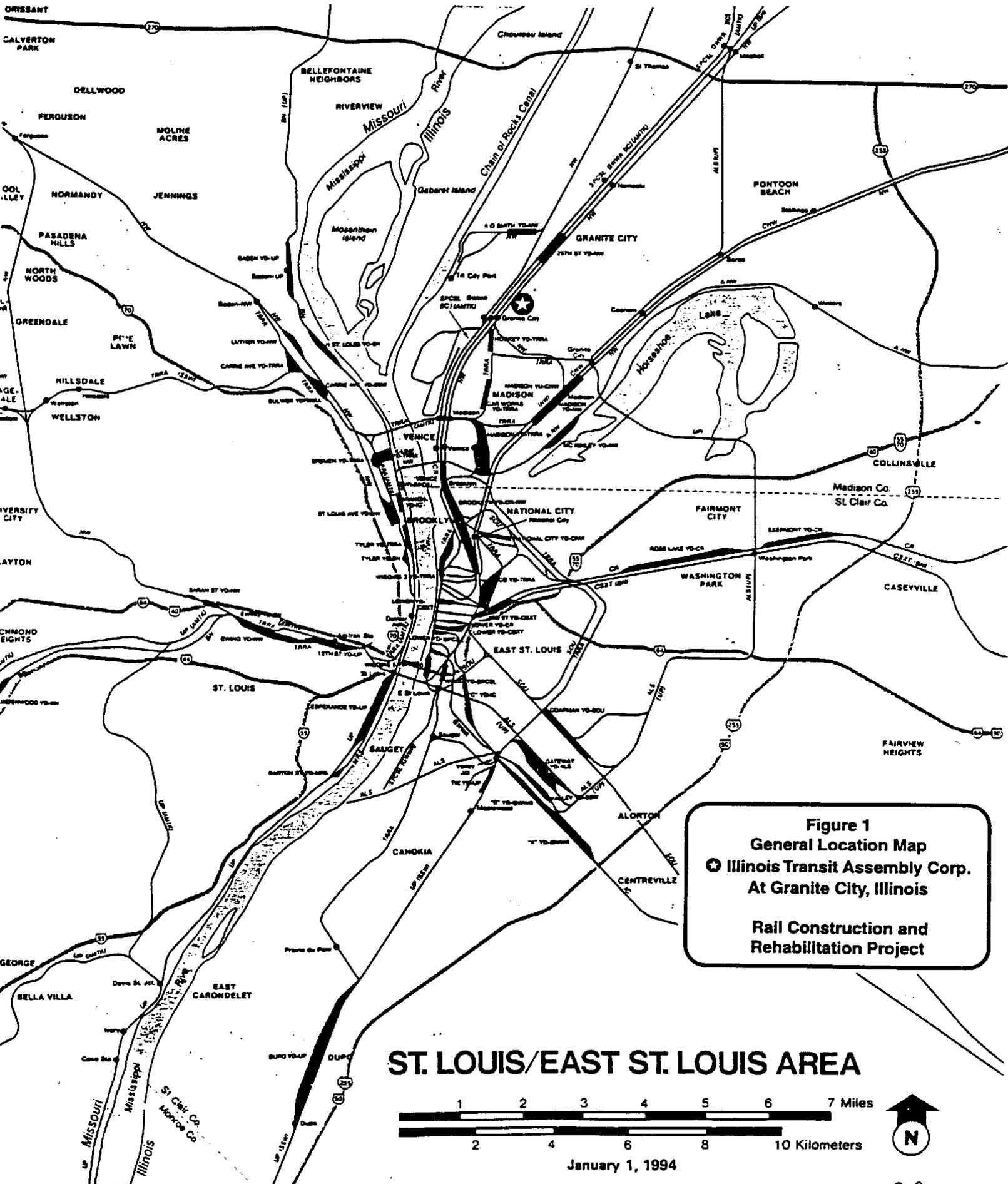
INVESTMENT OPTIONS

Two investment options are considered in determining whether a track construction and rehabilitation project at ITA's proposed facility is eligible for state funds.

- No investment, which would eliminate the existing facility and 22 existing jobs.
- Invest \$750,000 to construct 2,532 feet of track, rehabilitate 1,424 feet of existing track, permitting this rail facility to handle 60 rail cars per year.

NO INVESTMENT

Failure to invest in rail construction and rehabilitation will impede the economic growth of ITA and the local community. There will be a loss of 22 existing jobs threatened by the intended UP abandonment, 28 projected new jobs from ITA's expansion, and the sale of a vacant industrial site to house the rail project.



INVESTMENT

The investment option would enhance the local Granite City economy by retaining existing jobs, creating new jobs, and converting a vacant industrial site into a revenue producing rail facility. Estimated project costs are found in Table 1.

**Table 1
Estimated Project Costs**

| Item No. | Description | Quantity | Cost |
|----------|--|-------------------|---------------------|
| 1 | Engineering | 1 Lump Sum | \$ 5,500.00 |
| 2 | Saw Cut & Remove Concrete | 589 Sq. Yard | 14,725.00 |
| 3 | Remove Asphalt Pavement | 1945 Sq. Yard | 35,010.00 |
| 4 | Remove Fence | 1 Lump Sum | 400.00 |
| 5 | Excavate Unwanted Material | 2,588 Cu. Yard | 31,056.00 |
| 6 | Supply Subballast | 1,337.62 Cu. Yard | 32,102.88 |
| 7 | Skeleton Turnout Construction (No. 7) | 3 Each | 13,500.00 |
| 8 | Switchties (7" x 9") | 3 Turnouts | 9,000.00 |
| 9 | Steel (100# or Heavier) | 3 Turnouts | 20,400.00 |
| 10 | Skeleton Turnout Construction (No. 8) | 1 Each | 5,000.00 |
| 11 | Switchties (7" x 9") | 1 Turnout | 3,200.00 |
| 12 | Steel (100# or Heavier) | 1 Turnout | 7,500.00 |
| 13 | Relocate Existing Turnout (No. 8) | 1 Each | 4,000.00 |
| 14 | Switchties (7" x 9") | .76 MBF | 738.17 |
| 15 | OTM | 1 Lump Sum | 500.00 |
| 16 | Skeleton Track Construction | 2,532 Track Foot | 60,768.00 |
| 17 | Rail (100# or heavier) | 5,064 Lineal Foot | 31,650.00 |
| 18 | Crossties (6" x 8") | 1,558 Each | 37,392.00 |
| 19 | Other Track Material | 2,532 | 20,256.00 |
| 20 | Dismantle Track | 129 Track Foot | 774.00 |
| 21 | Dismantle Wheel Stops | 1 Pair | 60.00 |
| 22 | Rehabilitate Turnout | 2 Each | 1,000.00 |
| 23 | Broom Existing Tracks for Tie Inspection | 1,424 Track Foot | 712.00 |
| 24 | Cross Tie Renewal | 258 Each | 14,706.00 |
| 25 | Furnish & Install Ballast | 1,893 Cu. Yard | 35,020.50 |
| 26 | Surface, Align & Dress | 5,149 Track Foot | 12,872.50 |
| 27 | Install Steel Bumping Post | 7 Each | 13,825.00 |
| 28 | Scrap Tie Removal | 270 Each | 1,080.00 |
| 29 | Bolt Tightening/Bar Repair | 2015 Track Foot | 5,037.50 |
| 30 | Bars | 2 Each | 20.00 |
| 31 | Bolts | 1 Keg | 200.00 |
| 32 | Bonds & Insurance | Lump Sum | 12,540.17 |
| 33 | Purchase Building | | *300,000.00 |
| | Contingencies | | 19,454.28 |
| | Total Estimated Cost | | \$750,000.00 |

* Non-eligible project cost

To determine the benefit/cost for this investment option, the estimated project cost is reduced by the residual value to approximate the remaining economic value of the improvement at the end of the five-year project life. The residual value of \$66,231, when discounted to its present worth of \$41,129, is subtracted from the cost detailed in Table 1 to provide an estimated project cost of \$708,871 as shown below.

| | <u>Rail & OTM</u> | <u>Ties</u> | <u>Total</u> |
|----------------------------------|-----------------------|-------------|--------------|
| Cost | \$93,326 | \$57,554 | |
| % Life Remaining | <u>x50%</u> | <u>x34%</u> | |
| Residual Value (5 yrs.) | \$46,663 | \$19,568 | \$66,231 |
| Present Worth Factor (10%-5yr.): | | | <u>0.621</u> |
| Present Worth of Residual Value: | | | \$41,129 |

| | | |
|-------------|------------------------------|---------------|
| In Summary: | Project Cost: | \$750,000 |
| | Less Present Worth Residual: | <u>41,129</u> |
| | Project Cost for Analysis: | \$708,871 |

Economic Benefits

Economic benefits provided by the proposed rail construction and rehabilitation project include the economic savings from retaining 22 employees and hiring an additional 28 full time and three part time employees to handle the increased volume at the expanded rail facility. The combined salary and benefits of the 50 full time and three part time employees is \$909,484. These economic benefits are quantified over a five-year period in Table 2 below.

**Table 2
Economic Benefits**

| Project Year | Wage & Benefits | Discount Factor | Total Discounted Benefits |
|---------------------|----------------------------|------------------------|----------------------------------|
| 1-5 | \$909,484 | 3.791 | \$3,447,854 |

Benefit/Cost Analysis

The economic benefits directly attributable to this project over a five year period are \$3,447,854. These benefits when compared to the net project costs of \$708,871, yield a benefit cost ratio of 4.86, thereby qualifying this project for program funding.

$$\frac{B}{C} = \frac{\text{Economic Benefits}}{\text{Net Project Cost}}$$

$$\frac{B}{C} = \frac{\$3,447,854}{\$708,871} = 4.86$$

LINE: Known as East Side Lead, Illinois International Port District
OPERATOR: Norfolk Southern Corporation
OWNER: Illinois International Port District (IIPD) State of Illinois

PROBLEM STATEMENT:

With severe drainage problems in the port area, the track structure on the various industrial leads has deteriorated to the point where rehabilitation is now necessary to maintain service. This analysis will explore the benefits of the use of Rail Freight Program funds for the necessary emergency rehabilitation within this state-supported facility.

BACKGROUND:

Because of limited maintenance resources, the IIPD owned East Side Lead trackage has deteriorated to a marginal condition. The situation is compounded by a severe drainage problem. In the areas where this problem is most severe, the ties are no longer supporting the rail. Therefore, without rehabilitation and drainage correction being performed within the near future, continued service to all of the users is questionable.

One derailment has occurred recently involving hazardous materials. This derailment will be discussed further in this analysis. The particular concern, at this point, is that neither the operating railroad, the Port, nor the State of Illinois wish this potential disaster to recur.

LOCATION OF THE LINE:

The East Side tracks are located on the east side of Lake Calumet. This area is in the city of Chicago, Cook County, Illinois. The project limits are identified on the following map.

ENVIRONMENTAL CONCERNS:

As mentioned previously, a derailment recently occurred on this trackage. The containment and clean-up involved an expenditure by the Port of some \$100,000. Very little hazardous material was released and no evacuation was necessary. Without the diligent care of the operating crews on this poor track, this derailment could have been a very serious problem. Therefore, it is absolutely essential, from a safety and service standpoint, that the East Side Lead be rehabilitated in the very near future. Failure to accomplish such rehabilitation will also result in a cessation of service to a substantial number of rail dependent industries.

The rehabilitation project will involve existing trackage. No other land areas will be involved.

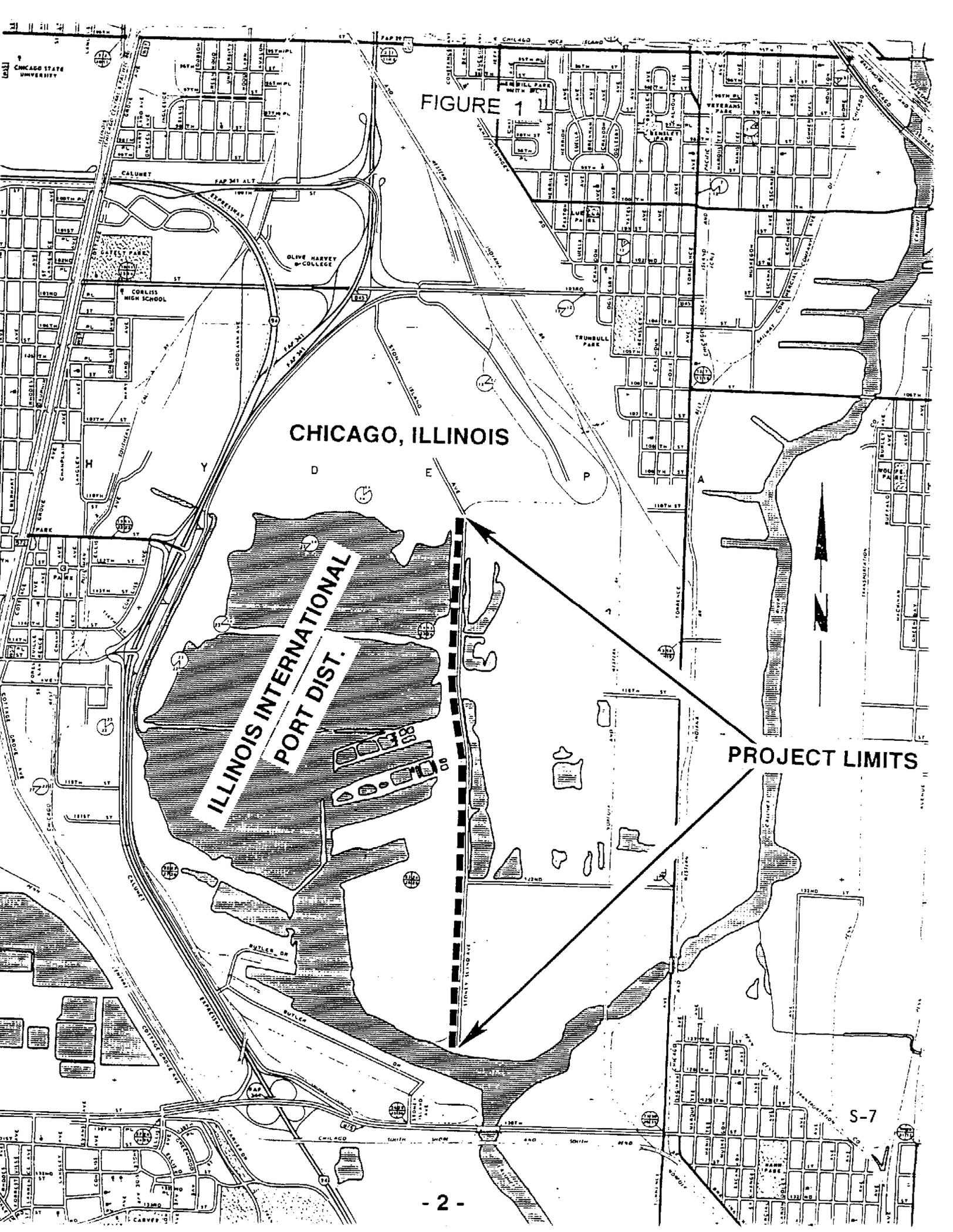


FIGURE 1

CHICAGO, ILLINOIS

ILLINOIS INTERNATIONAL
PORT DIST.

PROJECT LIMITS

S-7

ALTERNATE TRANSPORTATION:

Without rail service, the only alternative is highway/water transport. Given that the majority of the commodities are shipped in bulk, serious supply problems will result if a switch to total motor carrier transportation occurs. As is the case with the largest rail user at the Port, highway transport is not an option. This particular user must supply its customers by railcar because that is the only method these customers have available to receive these particular commodities. Therefore, for this user, no alternatives exist. Simply stated, rail service must be retained or the company would be forced to close and bear the ramifications of not honoring supply contracts in force with fifteen major companies.

In particular, this analysis will explore the results of the potential loss of service to this, the largest of the five users of the East Side rail facility.

INVESTMENT OPTIONS:

Two options are compared in this analysis:

- No Investment: The five users would lose service.
- Investment Option: Invest \$400,000 for the necessary rehabilitation.

IMPACT OF NO INVESTMENT:

Without an investment it is assumed that the line would operate another 60 days. What would happen, with little doubt, is that service would again cease due to another derailment. This would cause another outlay of \$100,000 for cleanup. The IIPD would be responsible for this amount if a minimum spill occurs. Since the Port is a state-owned facility, it is assumed that this conservative amount would be a public loss.

In the event of another major derailment service would be lost to the five users and, in particular, the one major user would have no choice but to stop operating.

The ramifications to the local economy would be an immediate loss of 60 jobs.

The following table provides the economic loss to the area's work force.

TABLE 1
NO INVESTMENT
Economic Disruption Due to Job Loss

| | | | |
|----------------|-----------------------|----------------------|----------------------------|
| | Salaries and Benefits | \$3,461,900 | |
| <u>Project</u> | <u>Economic</u> | <u>Present Worth</u> | <u>Economic Disruption</u> |
| <u>Year</u> | <u>Disruption</u> | <u>Factor</u> | <u>(Discontinued)</u> |
| 1 | \$3,461,900 | .909 | \$3,146,867 |

TABLE 2
Public Loss Due to One Derailment

| <u>Project</u> <u>Year</u> | <u>Economic</u> <u>Disruption</u> | <u>Present Worth</u> <u>Factor</u> | <u>Economic Disruption</u> <u>(Discontinued)</u> |
|-------------------------------|--------------------------------------|---------------------------------------|---|
| 1 | \$100,000 | .909 | \$90,900 |

INVESTMENT OPTION:

The investment of \$400,000 would bring the trackage involved up to safe operating standards and correct the drainage problems which in turn have caused the numerous crosstie failures.

Table 3

Estimated Cost

| <u>Item</u> | <u>Quantity</u> | <u>Labor</u> | <u>Material</u> | <u>Totals</u> |
|------------------|-----------------|--------------|-----------------|------------------|
| Ballast | 3,616 C.Y. | \$56,648 | \$64,231 | \$120,879 |
| Crossties | 3,066 EA. | 53,716 | 64,202 | 117,918 |
| OTM | 3,586 T.F. | 397 | 7,172 | 7,569 |
| Crossing | 2,234 L.F. | 49,827 | 37,160 | 86,987 |
| Rail | L.F. | 540 | 490 | 1,030 |
| Turnouts | EA. | 3,578 | 4,380 | 7,958 |
| Bond & Ins. | Lump | -- | -- | 8,888 |
| Drainage/Grading | Lump | -- | -- | 13,214 |
| Contingencies | Lump | -- | -- | <u>35,557</u> |
| | | | | \$400,000 |

For the benefit/cost formula, the estimated rehabilitation cost is reduced by the residual value of the materials remaining after the five year project life. The cost for the benefit/cost (B/C) formula is summarized is as follows:

Table 4

| | <u>Rail/OTM</u> | <u>Ties</u> | <u>Total</u> |
|-------------------------|----------------------|----------------------|--------------|
| Costs | \$ 1,421.00 | \$59,956.00 | |
| Material Life Remaining | <u> x 75%</u> | <u> x 67%</u> | |
| Residual Value | \$ 1,065.75 | \$40,170.52 | |
| Present Worth | <u> .386</u> | <u> .386</u> | |
| Residual Value | \$ 411.00 | \$15,506.00 | \$15,917.00 |
| Net Project Cost | \$400,000.00 | | |
| Residual Value | <u>- 15,917.00</u> | | |
| Cost for B/C | \$384,083.00 | | |

BENEFIT/COST ANALYSIS:

Economic Benefits

The retention of rail service on the East Side tracks will enable the continued employment of 60 people. Quantified in one year, the economic benefits exceed \$3 million.

Public Benefits

The State of Illinois established the Port through legislation in 1951. It was then known as the Chicago Regional Port District. The IIPD is owned by the state and is operated as a private sector venture. Revenues are derived by providing warehousing, storage, terminal and transfer facilities through lease arrangements. Revenues are also derived by charging the railroad a wheelage fee for the use of the tracks just as ship and barge operators are charged wharfage fees. The Port is operated solely from these revenues.

Providing funds for the rehabilitation of the Port owned tracks would forego the expense of additional derailments and cleanup. The amount of \$100,000 was used in this analysis as that was the expenditure of the last event. This is foreseen as a minimum amount that will have to be paid again if the tracks are not repaired. The Port can ill afford this continuing expense.

The Benefit/Cost ratio is presented in the following formula:

$$\frac{B - \text{Economic Benefits} + \text{Public Benefits}}{C \quad \text{Discounted Cost (Table 4)}}$$

$$\frac{B = \$3,146,867 + \$90,900}{C \quad \$384,083} = \frac{\$3,237,767}{\$384,083} = 8.42$$

RECOMMENDATION:

The department should provide the necessary funds under the Rail Freight Program to rehabilitate the East Side Lead to insure public safety and the continued operation of this essential rail facility.

LINE: Norfolk Southern (NS)
OWNER: Grand Prairie Coop. Inc. (GPCI)
OPERATOR: NS

PROBLEM STATEMENT:

To gain necessary economies of scale, a grain company needs to expand its existing rail facility from a 17 carload capacity up to a 50 carload loading capacity.

BACKGROUND:

This grain facility is located on the Norfolk Southern which allows direct access to the strong Decatur grain market to the south of Galesville. Direct access north to Chicago could also be gained on this line.

If the increased car capacity is gained, area farmers will gain higher prices for grain sold. Some of the transportation savings generated from shipping larger units will be passed on to the area farmers, since this company must be competitive to other area elevators which have the necessary car capacity. Simply stated, the competition for increased throughput or grain capacity will require that a higher price be paid to area farmers. Without a higher price, sufficient supply will not be achieved.

Given a short-term increase in grain sales as a result of the increased siding capacity, long-term sales at higher prices can also be foreseen. This is primarily due to the NS having access to the Decatur market, various ports not only in Illinois but also on the East Coast.

LOCATION:

Galesville is located in Piatt County. It is northeast of Decatur and almost 25 miles west of Champaign. The project would involve 1.4 acres of newly acquired property for the right-of-way.

PHYSICAL CONDITION:

The project will involve new construction.

INVESTMENT OPTIONS:

Two options are compared in this analysis.

- No Investment - which maintains the status quo of the area
- Invest \$550,000 for new construction to extend a the spur from the existing side track and acquire a grain sampler.

NO INVESTMENT OPTION:

Without an investment, the local agricultural economy will not enjoy an increase in price for grain. Service along the entire line will continue. But without shipments in 25 car multiples, no increases can be foreseen in the price for area grain. Also, additional employment will not be realized.

IMPACT OF NO INVESTMENT:

Table 1 below, details the lost income to the region without an investment. Table 2 depicts the transportation cost savings which will not be realized. The quantities presented are both soybeans and corn in aggregate to various markets annually. The rate differential ranged from 3 cents to 14 cents per bushel.

Table 1

Economic Loss

| Project Year | Lost Employment | Average Annual Wage and Benefits | Present Worth Factor | Total Economic Loss |
|--------------|-----------------|----------------------------------|----------------------|---------------------|
| 1-5 | 1 | \$32,000 | 3.791 | \$121,310 |

Table 2
Transportation Cost Savings

| Project Year | Annual Savings | Present Worth | Cost Savings Discounted |
|--|----------------|---------------|-------------------------|
| 1 | \$127,500 | .909 | \$115,900 |
| 2 | \$137,650 | .826 | \$113,650 |
| 3 | \$151,400 | .751 | \$113,700 |
| 4 | \$163,050 | .683 | \$111,360 |
| 5 | \$171,700 | .621 | <u>\$106,630</u> |
| Total Transportation Cost Savings in 5 Years | | | \$585,240 |

INVESTMENT OPTION:

The following table presents the costs of construction if the project is undertaken. This was the only investment option considered in the analysis. However, the construction could possibly be phased over two to three years. For example, one sidetrack could be constructed and in a later year the second track could then be constructed which would capitalize on the initial investment. For purposes of the analysis, the entire project is considered.

TABLE 3
Estimated Costs

| ITEM | UNITS | MATERIAL | LABOR | TOTAL |
|----------------------|-----------|-------------|----------------------|---------------------|
| Clear & Grub | Lump | - | - | \$ 2,445.00 |
| Grading | Lump | - | - | \$50,000.00 |
| Subballast-CA6 | 3100 C.Y. | \$40,300.00 | \$21,700.00 | \$62,000.00 |
| Skeleton Track | 3750 T.F. | - | \$56,250.00 | \$56,250.00 |
| Rail 100 lb. | 7500 L.F. | \$37,500.00 | - | \$37,500.00 |
| Ties 6x8 | 2308 Ea. | \$46,100.00 | - | \$46,100.00 |
| OTM | 3750 T.F. | \$22,500.00 | - | \$22,500.00 |
| Skeleton T.O. | 4 Ea. | - | \$26,000.00 | \$26,000.00 |
| Ties #8 | 4 Ea. | \$12,800.00 | - | \$12,800.00 |
| Rail 100 lb. | 4 Ea. | \$28,000.00 | - | \$28,000.00 |
| Ballast-CA5 | 2700 C.Y. | \$35,100.00 | \$ 5,400.00 | \$40,500.00 |
| Surf.Align.& Dress | 4550 T.F. | - | \$ 6,825.00 | \$ 6,825.00 |
| Timber/Asphalt X-ing | 100 L.F. | \$ 5,360.00 | \$16,080.00 | \$21,440.00 |
| Culvert 18" | 100 L.F. | \$ 2,550.00 | \$ 1,150.00 | \$ 3,700.00 |
| End Sections 18" | 4 Ea. | \$ 880.00 | - | \$ 880.00 |
| Bonds/Ins. | Lump | - | - | \$ 8,000.00 |
| NS T.O. | 1 Ea. | - | - | \$35,000.00 |
| Grain Sampler | Lump | - | - | \$71,030.00 |
| | | | Contingencies | \$19,030.00 |
| | | | Total Estimated Cost | <u>\$550,000.00</u> |

BENEFIT COST ANALYSIS:

For the benefit/cost analysis, the total project cost is reduced by the residual value of the material life remaining in the spur at the end of the ten (10) year project life. The present residual value is as follows:

| | Grain Sampler, <u>Rail & OTM</u> | <u>Ties</u> |
|------------------------------|---|-------------|
| Cost | \$179,030 | \$74,100 |
| % of Material Life Remaining | <u>.50</u> | <u>.34</u> |
| Residual Value | 89,515 | 25,194 |
| Present Worth Factor | <u>.386</u> | <u>.386</u> |
| Residual Value (Discounted) | \$ 34,553 | \$ 9,725 |
| Total Residual Value for B/C | \$44,278 | |
| | | |
| Project Cost | \$550,000 | |
| Less Residual Value | <u>44,278</u> | |
| Net Project Cost | \$505,722 | |

The benefits applicable to this investment is an increase of one job to the region if the improvement is constructed and the transportation cost savings all expected in five years, as described under the No Investment Option. When compared to the total cost of the project, the resultant Benefit/Cost Ratio is as follows.:

B - Economic Benefits + Transportation Cost

C Cost - Residual Value

B - \$121,310 + \$585,240 -

C \$550,000 - \$44,278

B = \$706,550 -1.40

C \$505,722

LINE: At Harvey, Illinois

OWNER: Allied Tube & Conduit

OPERATOR: Allied Tube & Conduit and Illinois Central Railroad

PROBLEM STATEMENT:

A south Chicago based manufacturer of steel tubing is planning to incorporate a pre-production operation adjacent to its existing mill. It has acquired the property and has plans in place to construct the necessary buildings and machinery. Rail service to this site is essential, and the existing in-plant track needs to be reconfigured and expanded to the new facility.

The company has applied to the Department for a Rail Freight Program loan. The following analysis examines the benefits and costs associated with its planned plant expansion and rail improvement.

BACKGROUND:

Allied Tube, a Division of Tyco International, operates a manufacturing facility in Harvey, Illinois that produces rolled steel tubing for use in fire suppression (sprinkler) systems, as well as thin walled steel conduits for fencing, electrical wiring and other applications.

Inbound roll steel is delivered primarily by rail, with outbound finished goods being moved by both rail and truck.

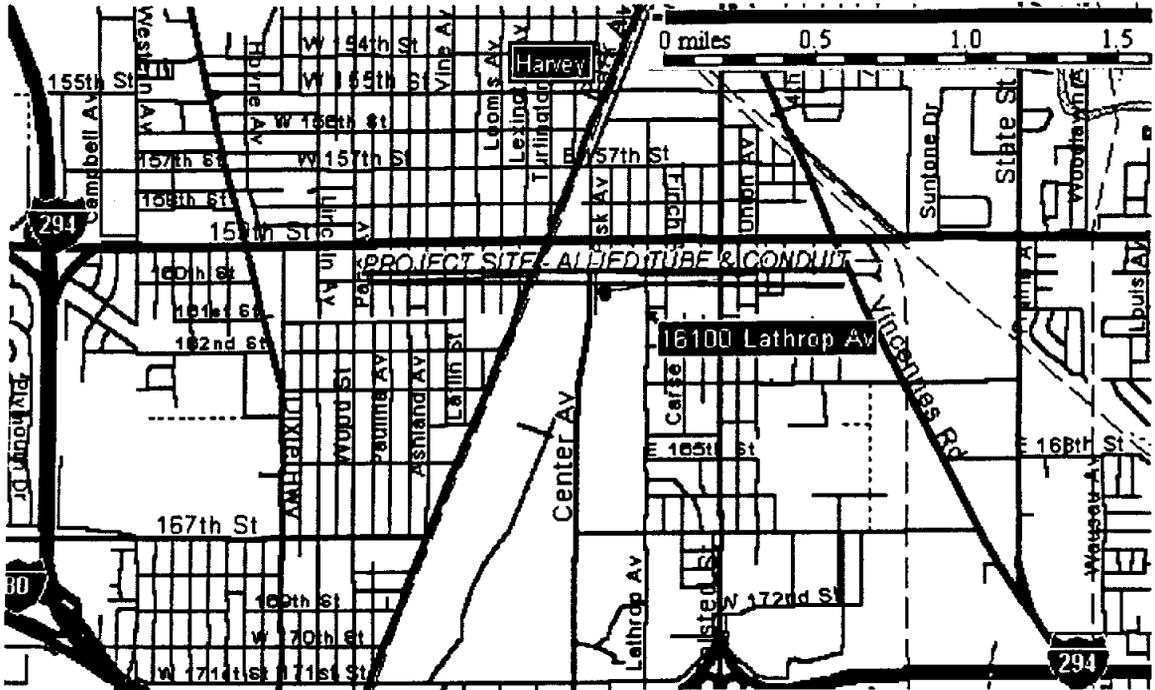
Currently, the inbound roll steel from mills is taken through a cleaning or "pickling" process at a remote location, and is then re-rolled before being shipped to the Harvey plant. Allied has decided to integrate this special metal processing (SMP) operation at the Harvey plant, and has purchased vacant land immediately north of its existing site for that purpose.

It needs rail facilities to move steel between the existing plant and the new site.

LOCATION:

Harvey is located in Cook County approximately 20 miles south of Downtown Chicago. It is located on the Illinois Central Railroad main line from Chicago to Memphis. The site of the project is more specifically located alongside Center Avenue, and south of 159th Street, as shown in Figure 1.

FIGURE 1
LOCATION MAP
HARVEY, ILLINOIS
Allied Tube - SMP Facility



ALTERNATE TRANSPORTATION:

Direct rail access to this site is critical for integrating the cleaning process in the forming and rolling currently in place at the plant. Rolled steel comes from mills as far away as Ohio, and while truck transport is utilized somewhat, rail is the least costly means of transport.

INVESTMENT OPTIONS:

For the purpose of determining whether or not the proposed rail facility is eligible for funding under the Rail Freight Program, two options are compared in the benefit - cost analysis:

- No Investment or a Null Alternative, which precludes the location and expansion of the SMP operation at Harvey; and
- A \$15,275,000 capital investment in plant, machinery, equipment and rail facilities to integrate the roll steel cleaning in the tube fabrication process.

No Investment Option - Null Alternative

If this option were to be implemented, the manufacturer would continue to rely on outside vendors at remote locations to process and re-roll the steel coil it uses. This is less efficient and more costly for the company, which is seeking to minimize the costs of its final product. In addition to continuing to incur the higher material costs, the company would not be able to expand its capacity and provide additional local area jobs. These benefits, foregone under a no investment scenario, are described and quantified in the following section.

\$15,275,000 Construction & Expansion Option.

This level of investment by Allied Tube will provide for improvements that expand its manufacturing and production capabilities to include roll steel processing prior to the forming process. Pickling, as it is called, involves an acid cleaning of the surface of coil steel rolls. To accomplish this Harvey, Allied Tube has purchased a vacant site immediately to the north of its main manufacturing plant, and intends to install steel processing equipment within a new 40,000 square foot building. This level of investment also involves installation of machinery, utilities, and rail facilities as detailed in Table 1 and as illustrated in Figure 2.

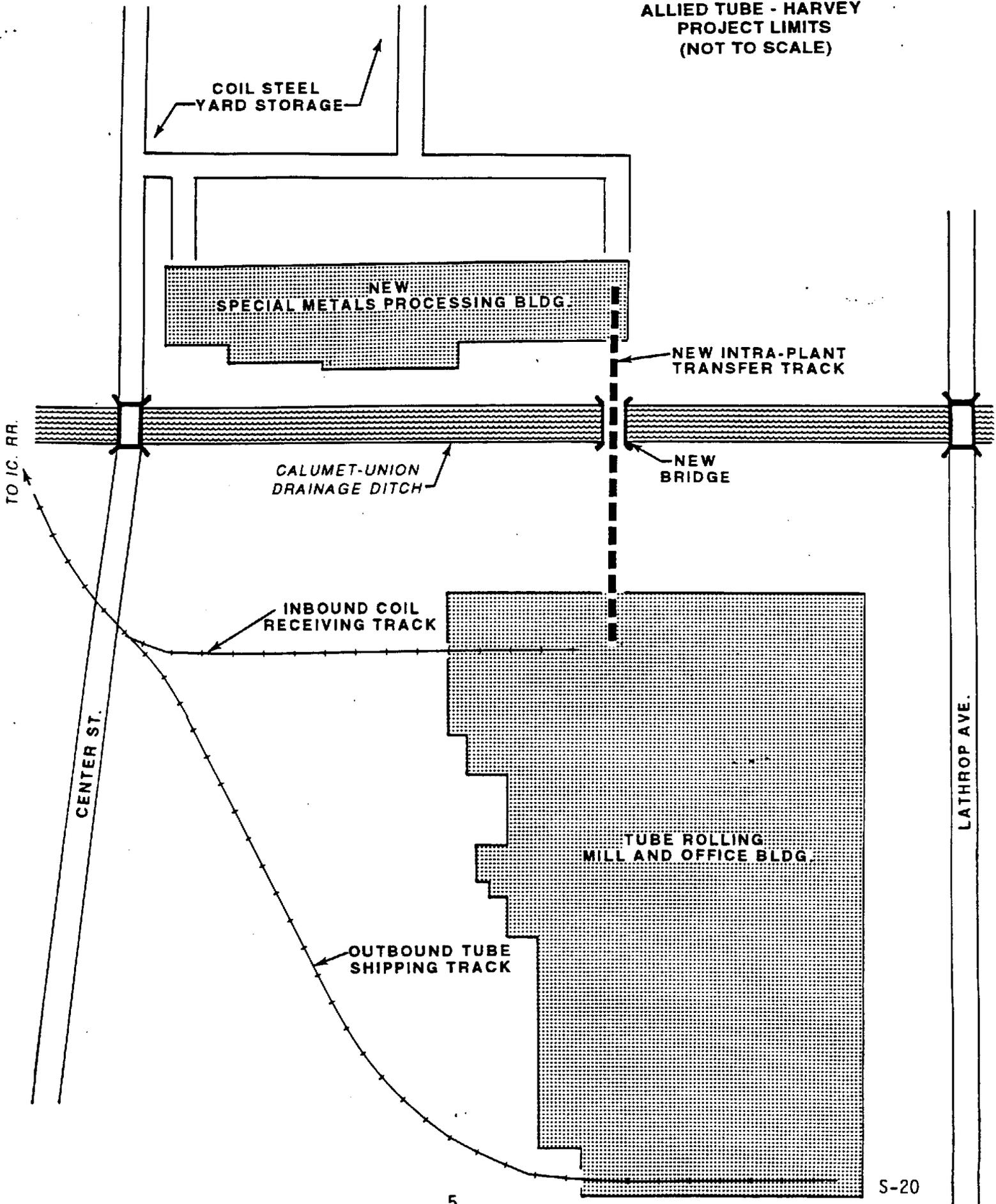
**-TABLE 1-
-INVESTMENT OPTION COST ESTIMATE-**

| Item | Units | Material Cost | Labor/Equip. Cost | Total Cost |
|---|----------|---------------|---|----------------------------|
| <u>Rail Facility improvements:</u> | | | | |
| Site work --prep. & demolition | LS | | | \$ 18,140 |
| Subgrade Prep. & Subballast | LS | | | 23,542 |
| Intraplant shuttle trackage. | 623 T.F. | | | 69,551 |
| Bridge construction | 60 L.F. | | | 214,500 |
| Fencing & lighting | LS | | | 27,000 |
| Associated paving & Concrete work | JOB | | | 46,685 |
| Design & Engineering | LS | | | 38,554 |
| Contingencies - Gen. Conditions | | | | <u>37,028</u> |
| | | | <u>Subtotal, rail facilities:</u> | <u>\$ 475,000</u> |
| <u>Non-Rail Project Elements:</u> | | | | |
| Other Real Estate Improvements | Bldg. | | | \$5,300,000 |
| Machinery | LOT | | | 8,300,000 |
| Utilities | LOT | | | <u>1,200,000</u> |
| | | | <u>Subtotal, non-rail elements:</u> | <u>\$14,800,000</u> |
| | | | <u>Total Estimated Project Cost:</u> | <u>\$15,275,000</u> |

With regard to specific rail facilities, this option entails the construction of some 623 feet of single track from the existing mill across a new trestle constructed over the Calumet Union Drainage Ditch. Traffic would flow in both directions on this intraplant track shown in Figure 2: coil steel inbound to the plant would be off-loaded and transferred to a shuttle operation between the existing mill and the new processing plant. Once treated, or "pickled", coils can be held in storage, or transferred back to the rolling mill for forming.

Because the actual useful life of the investment detailed in Table 1 is greater than the 5 year time frame used to measure benefits, the Project Cost is reduced by a residual value. The residual value, calculated in Table 2, is an estimate of the value of the remaining life of the building, equipment and rail facilities at the end of the fifth year following project completion. It is assumed in calculating residuals that the project cost provided by the industry represents each elements new value, and that the useful economic life of components are as follows:

**FIGURE 2
ALLIED TUBE - HARVEY
PROJECT LIMITS
(NOT TO SCALE)**



| <u>Project Element</u> | <u>Economic Life</u> | <u>Percent of Life Remaining @ 5 Yr.</u> |
|---------------------------------------|----------------------|--|
| Building and Real Estate Improvements | 30 years | 83.4% |
| Machinery & Equipment | 15 years | 66.7% |
| Rail facilities, excluding trestle | 18 years* | 72.2% |
| Trestle | 50 years | 90.0% |

Table 2
Residual Value of Investment – Year 5

| <u>Item:</u> | <u>Building & Real Estate</u> | <u>Machinery & Equipment</u> | <u>Rail Facilities</u> | <u>Trestle</u> | <u>Total</u> |
|--------------------------|-----------------------------------|----------------------------------|------------------------|----------------|--------------|
| Cost | \$5,300,000 | \$8,300,000 | \$69,551 | \$214,500 | |
| Percent Remaining | 83.4% | 66.7% | 72.7% | 90% | |
| Residual Value @ Year 5: | \$4,420,200 | \$5,536,100 | \$50,564 | \$193,050 | \$10,199,914 |
| | Present Worth Factor: | | | | 0.6209 |
| | PRESENT WORTH - RESIDUAL: | | | | \$ 6,333,127 |

Subtracting the present worth of the project's residual value, \$ 6,333,127, from the cost in Table 1, yields a cost for the benefit-cost calculation of \$8,941,873.

INVESTMENT OPTION BENEFITS:

The industry has reported that it will realize significant savings over time that justify their capital investment. In addition to the production cost savings, from the regional economic perspective the company will provide new job opportunities at various positions and skill levels that would not be available without this investment.

Transportation Efficiency Benefits

The principal transportation efficiency benefit of this investment is the elimination of an intermediate handling step by the mill or processor to take the steel run it through the cleaning process, re-roll and then re-ship to the plant. While this will essentially take place at the expanded Allied site, there is a savings involved by integrating the process internally as part of tubing production and transportation.

Based on the amount of coil steel the manufacturer projects it will handle, the savings can be significant, up to an estimated \$1,008,000 per year (the total tonnage and the savings per ton identified by the shipper are not disclosed here so as to maintain confidentiality of commercially sensitive information).

* Composite figure based on life of components (rail, ties and other track material).

Regional Economic Benefits:

This project entails a substantial increase in local business activity by the shipper. When it is completed and production is underway, the company projects that it will add 70 full time employees at the SMP, and an additional 10 positions at the tube mill. Positions to be open vary in annual wage and fringe benefits but are projected to total \$3,675,000 per year when the project is completed.

Over a five year project analysis period, the total benefits of this option exceed \$17.7 million, as shown below.

Total Benefits = Yearly Transportation Benefits + Yearly Economic Benefits X (SPWF*[10%5yrs])

$$B = (\$1,008,000 + \$3,675,000) \times 3.7908 = \$17,752,316$$

BENEFIT COST RATIO:

Using the benefits described in the previous section, and comparing them to the cost detailed earlier in Table 1, a B/C ratio of 1.99 is derived as follows:

$$\frac{B}{C} = \frac{\text{Current Value of Transportation Benefits + Economic Benefits}}{\text{Total Project Cost - Residual Value}}$$

$$\frac{B}{C} = \frac{\$17,752,316}{\$15,275,000 - \$6,333,127}$$

$$\frac{B}{C} = \frac{\$17,752,316}{\$8,941,873} = 1.99$$

Based on the proceed information and calculations, the proposed investment meets the benefit-cost criteria for inclusion as an eligible project in the Department's program.

* SPWF is the "Series Present Worth Factor", which discounts a future uniform annual cash flow to its current value, accounting for inflation and the time value of money.

LINE: Norfolk Southern (NS)
OWNER: City of Granite City
OPERATOR: NS

PROBLEM STATEMENT:

As a condition to the site selection, a new steel processing plant requires rail service.

BACKGROUND:

The city of Granite City is in the process of establishing a new industrial park. Given the type of industry which will be located there, rail service is required. With the volume and weights of materials moved, the most economical means of transportation is by railroad.

ENVIRONMENTAL CONCERNS:

The department has provided funds for a previous project in this same area. The necessary environmental studies were performed. No significant historic, architectural or archaeological resources were found to be located in the area.

The property purchased by the city was owned by the NS and a smaller piece was owned by another industry which has been located in the area for a number of years. The entire area is zoned industrial.

LOCATION:

Granite City is located in Madison County, Illinois. The project site is located 2.5 miles south of Interstate 270 just off of Illinois Route 3. The project would involve 1.19 acres of newly acquired property for the right-of-way.

PHYSICAL CONDITION:

The project will involve new construction.

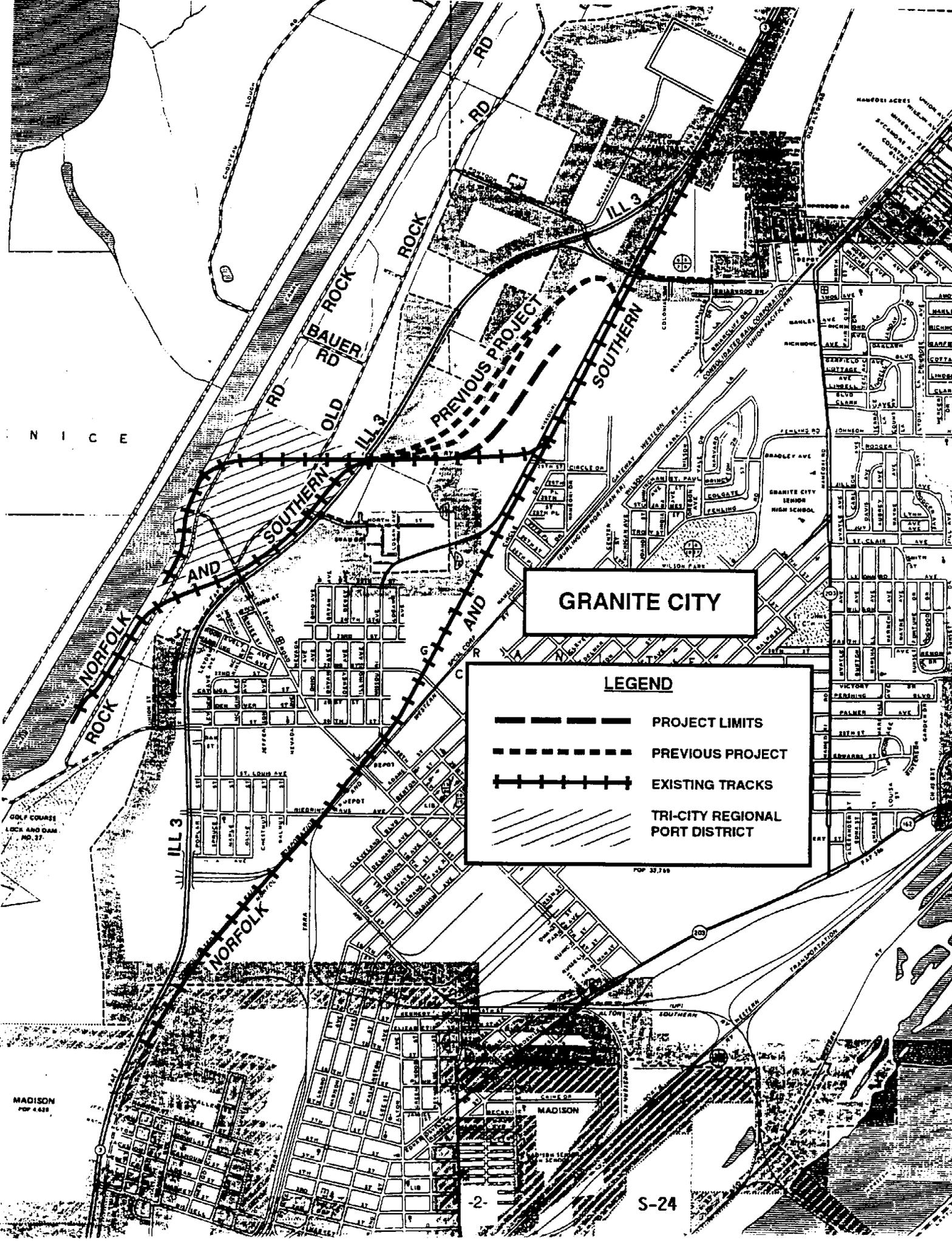
INVESTMENT OPTIONS:

Two options are compared in this analysis.

- No Investment - which maintains the status quo of the area
- Invest \$1,000,000 for new construction to extend a spur from an existing line owned by NS.

NO INVESTMENT OPTION:

Without an investment, the local economy will not enjoy an increase in employment. Service along the entire line of the serving carrier will continue. Therefore, the additional traffic to be provided by this project will not aid in the retention of a rail line. However, without the project, additional revenues to the railroad, the city's tax base and additional jobs will not be realized.



N I C E

GRANITE CITY

LEGEND

-  PROJECT LIMITS
-  PREVIOUS PROJECT
-  EXISTING TRACKS
-  TRI-CITY REGIONAL PORT DISTRICT

GOLF COURSE
LOCK AND DAM
NO. 37

MADISON
PDF 4428

POP 32,788

IMPACT OF NO INVESTMENT:

Table 1 below, details the lost income to the region without an investment. Table 2 depicts the transportation cost savings which will not be realized. The quantities presented are in aggregate to various markets annually.

Table 1
Economic Loss

| <u>Project Year</u> | <u>Lost Employment</u> | <u>Average Annual Wage and Benefits</u> | <u>Present Worth Factor</u> | <u>Total Economic Loss</u> |
|---------------------|------------------------|---|-----------------------------|----------------------------|
| 1-5 | 25 | 728,000 | 3.791 | \$2,759,848 |

Table 2
Transportation Cost Savings

| <u>Project Year</u> | <u>Annual Savings</u> | <u>Present Worth</u> | <u>Cost Savings Discounted</u> |
|---------------------|-----------------------|----------------------|--------------------------------|
| 1-5 | \$350,000 | 3.791 | <u>\$1,326,850</u> |
| Total Impacts: | | | <u>\$4,086,698</u> |

INVESTMENT OPTION:

The following table presents the costs of construction if the project is undertaken. This was the only investment option considered in the analysis. It is considered to be the minimum amount necessary to establish service to the new industrial park and to serve the first new business to locate there. No other tracks will be constructed under this project.

TABLE 3
Estimated Costs

| ITEM | QUANTITY | MATERIAL | LABOR/EQUIP- MENT & OTHER | TOTAL |
|--------------------------|------------|----------|------------------------------|---------------------------|
| Grading | Lump Sum | - | \$ 205,810 | \$ 205,810 |
| Subballast-16" | 5,812 Yds. | \$43,590 | \$ 55,210 | \$ 98,800 |
| Build Skeleton Track | 4,619 T.F. | - | \$ 75,660 | \$ 75,660 |
| Ties 6" x 8" | 2,639 Ea. | \$73,890 | \$ 8,560 | \$ 82,450 |
| Plates | 10,530 Ea. | \$21,060 | \$ 4,000 | \$ 25,060 |
| Rail - 112#/Yd. | 190 Ton | \$63,930 | \$ 3,970 | \$ 67,900 |
| Spikes | 11,366 Ea. | \$ 4,970 | \$ 850 | \$ 5,820 |
| Bars | 237 Pr. | \$ 4,270 | \$ 420 | \$ 4,690 |
| Anchors | 2,810 Ea. | \$ 4,220 | \$ 700 | \$ 4,920 |
| Build Skeleton Turnout | 3 Ea. | \$34,120 | \$ 25,880 | \$ 60,000 |
| Ballast, Surface & Align | 4,115 Yd. | \$34,250 | \$ 41,870 | \$ 76,120 |
| Drainage Structure | Lump Sum | | | \$ 12,000 |
| Special Structure | Lump Sum | | | \$ 100,000 |
| Contingency | | | | \$ 72,310 |
| Engineering | Lump Sum | | | <u>\$ 108,460</u> |
| Net Project Cost | | | | <u>\$1,000,000</u> |

BENEFIT COST ANALYSIS:

For the benefit/cost analysis, the total project cost is reduced by the residual value of the material life remaining in the spur at the end of the five (5) year project life. The present residual value is as follows:

| | <u>Rail & OTM</u> | <u>Ties</u> | |
|------------------------------|-----------------------|-------------|----------|
| Cost | \$109,260 | \$84,000 | |
| % of Material Life Remaining | <u>.50</u> | <u>.34</u> | |
| Residual Value | \$ 54,630 | \$28,560 | |
| Present Worth Factor | <u>.386</u> | <u>.386</u> | |
| Residual Value (Discounted) | \$ 21,087 | \$11,025 | |
| Total Residual Value for B/C | | | \$32,112 |
| | | | |
| Project Cost | \$1,000,000 | | |
| Less Residual Value (minus) | <u>32,112</u> | | |
| Net Project Cost for B/C | \$ 967,888 | | |

The benefits applicable to this investment are an increase of 25 jobs to the region and transportation cost savings all expected in five years, as described under the No Investment Option. When compared to the total cost of the project, the resultant Benefit/Cost Ratio is as follows..

$$\frac{B = \text{Economic Benefits} + \text{Transportation Cost}}{C \quad \text{Cost} - \text{Residual Value}}$$

$$\frac{B = \$2,759,848 + \$1,326,850}{C \quad \$967,888} =$$

$$\frac{B = \$4,086,698}{C \quad \$967,888} = 4.22$$

RECOMMENDATION:

A very conservative estimate of 25 new jobs created will qualify this project for funding through the Department's Rail Freight Program. The likelihood of additional jobs being created over time, the significant transportation savings to the industry and the certainty of increased traffic on the Illinois rail system drives the department's decision to fund this project.

LINE: Commercial Avenue Yard, District Yard and the Mainline Connecting the Two Yards
OWNER: The Belt Railway Company of Chicago (The Belt)
OPERATOR: The Belt

PROBLEM STATEMENT:

Given very heavy use, the line and yard areas have deteriorated to the point that a rebuild is necessary.

BACKGROUND:

The traffic on the three components of this operation primarily involve the movement of coal and coal products. One large user is the primary traffic generator. Therefore, traffic patterns, carloads and revenues may not be discussed in this document.

The main concern is the involvement of all three components, both yards and the mainline connecting the two yards. All three are necessary for the movement of loads and empties in and out of this area. The large volume of traffic moved demands the use of this large area and numerous trackage in both yards.

ENVIRONMENTAL CONCERNS:

No concerns are foreseen with this project. All the necessary work will be performed on existing railroad right-of-way. The entire area is zoned industrial.

LOCATION:

- Commercial Avenue Yard lies just north of and parallel to 95th Street or US Routes 12 and 20 and bounded by Jeffrey Boulevard to the west and Commercial Avenue on the east.
- District Yard, also known as "J" Yard, lies southeast of Commercial Avenue Yard. This yard is bounded by 100th Boulevard to the north and passes through 106th Street at the south. Torrence Avenue lies some six city blocks to the west.
- The mainline connecting these two yards runs east from Commercial then south under
- I-90 and then in a south-southwesterly direction, crossing 100th Boulevard to District Yard.

PHYSICAL CONDITION:

The yards and connecting trackage are in extremely poor condition.

INVESTMENT OPTIONS:

Two options are compared in this analysis.

- No Investment - The trackage will continue to deteriorate and service will be lost.

- Invest \$3,300,000 for rehabilitation of both yards and the trackage connecting the two yards. The entire Commercial Avenue Yard will be surfaced, and the ladder track at its east end, where virtually all the traffic is switched, will be rebuilt with 17 new 115# turnouts. The mainline running east and south will be relaid with new 136# welded rail. Finally, District Yard will be completely reconstructed with 115# rail and the one major grade crossing, used by heavy truck movements internal to a shipper's property, will be rebuilt.

NO INVESTMENT OPTION:

With no investment, all three components of this operation will continue to deteriorate to the point where the railroad will have to cease service. This will no doubt occur in the near future, given the poor condition now of all of the trackage. Since service can be very easily predicated to be lost, so will railroad and related jobs associated with this operation be lost. There are 62 jobs associated directly with this operation. The following table depicts the ramifications under the no investment option.

IMPACT OF NO INVESTMENT:

Table 1 below, details the lost income to the region without an investment. The economic loss only takes into account the railroad's jobs lost. Further impacts will result and will be discussed further in the recommendation section, since the secondary impacts are not quantified under this section.

Table 1
Economic Loss

| Project Year | Lost Employment | Average Annual Wage and Benefits | Present Worth Factor | Total Economic Loss |
|--------------|-----------------|----------------------------------|----------------------|---------------------|
| 1-5 | 62 | 3,079,100 | 3.791 | \$11,672,868 |

INVESTMENT OPTION:

The following table presents the costs of rehabilitation if the project is undertaken. This was the only investment option considered in the analysis. Simply, the trackage, yards and mainline, must be completely rehabilitated or service will be lost.

TABLE 2
Estimated Costs

| ITEM | QUANTITY | MATERIAL | LABOR/EQUIP. & OTHER | TOTAL |
|-------------------------|----------------------|-----------|-------------------------|---------------------------|
| DISTRICT YARD | [\$2,159,182] | -- | | |
| Grading /Ballast | Lump Sum | \$199,215 | \$ 201,116 | \$ 400,331 |
| Rail | 6740 T.F. | \$300,590 | \$ 413,519 | \$ 714,109 |
| Ties | 2,840 Ea. | \$266,820 | \$ 100,588 | \$ 367,408 |
| Turnouts | 20 Ea. | \$331,430 | \$ 155,360 | \$ 25,060 |
| Crossings | 300 T.F. | \$ 70,542 | \$ 45,600 | \$ 116,142 |
| Other | Lump Net. | -- | -- | \$ 74,402 |
| COMMERCIAL YARD | [\$799,477] | | | |
| Grading /Ballast | Lump | \$129,250 | \$ 214,179 | \$ 343,429 |
| Turnouts | 17 Ea. | \$245,650 | \$ 148,750 | \$ 394,400 |
| Other | Lump Net | -- | -- | \$ 61,648 |
| MAINLINE | [\$341,341] | | | |
| Grading /Ballast | Lump Sum | \$ 4,755 | \$ 6,109 | \$ 10,864 |
| Rail | 3650 T.F. | \$132,118 | \$ 57,271 | \$ 189,389 |
| Ties | 324 Ea. | \$ 9,720 | \$ 7,128 | \$ 16,848 |
| Other | Lump Net. | -- | | \$ 124,240 |
| Net Project Cost | | | | <u>\$3,300,000</u> |

BENEFIT COST ANALYSIS:

For the benefit/cost analysis, the total project cost is reduced by the residual value of the material life remaining in the materials at the end of the five (5) year project life. The present residual value is as follows:

| | | | |
|------------------------------|-----------------------|-------------|-----------|
| | <u>Rail & OTM</u> | <u>Ties</u> | |
| Cost | \$691,042 | \$394,611 | |
| % of Material Life Remaining | <u>.90</u> | <u>.75</u> | |
| Residual Value | \$ 621,938 | \$295,958 | |
| Present Worth Factor | <u>.621</u> | <u>.621</u> | |
| Residual Value (Discounted) | \$ 386,223 | \$183,790 | |
| Total Residual Value for B/C | | | \$570,013 |
| | | | |
| Project Cost | \$3,300,000 | | |
| Less Residual Value (minus) | <u>570,013</u> | | |
| Net Project Cost for B/C | \$2,729,987 | | |

CALUMET

COMMERCIAL AVE. YARD

DISTRICT YARD

CHICAGO
POP 2,783,728

PROJECT LIMITS

----- **MAINLINE**

▬ **YARD**

S-31



The benefits applicable to this investment are the retention of 62 jobs to the region expected in five years, as described under the No Investment Option. When compared to the total net project cost for the project, the resultant Benefit/Cost Ratio is as follows:.

B = Economic Benefits

C Cost - Residual Value

B = \$11,672,868 = 4.28

C \$2,729,987

RECOMMENDATION:

A conservative estimate of 62 new jobs being retained with an investment will qualify this project for funding through the Department's Rail Freight Program. Other benefits not quantified under this analysis, are retained property tax revenues to the city of Chicago, and other associated materials and supply industries which receive income in excess of \$6 million from this railroad operation. Therefore, the spillover benefits are even greater than the justifiable benefits provided in this analysis. Not only are the 62 jobs impacted, many more job losses will occur if this project is not undertaken. Other serious secondary impacts include coal shortages for power generation if service is lost. This will be especially true during the upcoming winter months. Therefore, this project should be undertaken as soon as possible.

THE BENEFIT COST METHODOLOGY: STATE-ONLY

Each option is put through two phases of analysis. The first phase is line viability; although a straightforward test, it is most difficult since so many variable factors must come together to determine whether the project passes or not. The second phase is the benefit/cost ratio. Both phases are described below.

Line Viability - Put simply, a line is viable if it makes a positive net contribution to the operation. For example: "Will sufficient traffic be generated to allow the railroad to either provide service in the case of a new construction project or to continue/reinstate service on an existing line once an investment takes place? Will the rail users make an effort to increase rail traffic thereby proving to the railroad that line profitability is possible?" In answering these and other questions, the Department determines a project's viability.

Benefit/Cost - The benefit/cost ratio compares the estimated benefits in dollars to the associated project cost necessary to obtain those benefits. Benefits are categorized into three groups: transportation, economic and public benefits (see below).

Benefits are calculated over a project life (generally five years but not exceeding ten years) and are discounted to reflect their present worth. A ten percent annual rate of return is used to determine present worth.

The benefits are measured against the net capital investment required to implement the project, less the residual value of the project material after the project life has been realized.

Benefit Analysis - The analysis identifies three distinct sets of benefits for each investment option:

- Transportation Benefits -- the avoidable additional cost of transporting affected freight shipments by other modes.

- Economic Benefits -- the avoidable loss of employment retention or the payroll benefits of employment creation and the utilization of raw materials and production assets within the local economy.
- Public Benefits -- the incremental reduction in directly-related government expenditures, or directly related public costs, resulting from the implementation of the investment option.

The calculation of these benefits is accomplished through the comparison of each investment option with a "No Investment Option." For instance, under the no-investment option for a rehabilitation project, capital improvements are not made, and only routine normalized maintenance of the line is assumed. The purpose of this option is to calculate what could be expected to happen to transportation costs, the local economy, the general public, and public expenditures if nothing were done to the rail line. This evaluation determines whether or not the rail line would remain in service, and also provides the base for measuring the avoidable costs which would in turn be benefits resulting from a capital investment. The calculations of specific benefits are accomplished through the following methods:

Transportation Benefits - Transportation benefits are calculated by determining the difference in costs between the no-investment option and the investment option for transporting the affected traffic from its origin to its destination. The costs calculated for this analysis are the actual costs of resources required to transport the traffic. The elements, which determine these costs vary between projects but, simply defined, are the operating and maintenance costs necessary to provide service. For rail, these costs include:

- Maintenance-of-way costs
- Maintenance-of-equipment costs
- Labor costs (primary crew costs and arbitraries)
- Fuel costs
- Administrative costs
- Return on investment

The existing rail mode costs are then compared to other modes such as truck, truck to rail and water. Any increased costs which can be avoided in an investment option are classified as a transportation benefit.

Economic Benefits - Economic benefits to communities are calculated by determining the avoidable loss of production to the local economy if the no investment option is undertaken. This analysis focuses on the utilization of non-transportation resources, such as manufacturing plants, manpower, and raw materials, which are influenced by the decision to improve (or not improve) or to construct a rail line. From this perspective, the impact on production is usually measured by the net income generated by the community.

Major emphasis in this category is placed upon the addition/ retention of jobs. Related jobs are lost forever if a company is forced to close its doors upon the loss of rail service. If it is determined through user surveys that this is the case, then the employment loss to the local economy is determined. Total annual salaries are assumed to be lost for one year, because of reemployment or relocation out of the area. From this value is subtracted the current unemployment compensation rate for an average family. The total is calculated and represents the avoidable loss of employment for the project life.

Public Benefits - Public benefits are calculated by assessing the savings in government expenditures or reduction in other costs to the public, if the investment option were implemented. In this case, the analysis of the no-investment option would indicate that costs (e.g. government expenditures) would be incurred without a capital investment. The investment option, by definition, would be a lower-cost alternative for government expenditures. An example of this benefit would be the relocation of a rail user to lower the cost of another transportation project, such as a highway construction project.

Cost Analysis - The benefits are measured against the net project cost minus the salvage value of the project material after the project life has been realized. The net project cost is the total cost of the capital improvement, including labor, for each investment option, minus the net salvage value of the track material extracted when the project is implemented.

To equalize the comparison of capital investment options, the present worth of the residual value of the project material at the end of the project life is subtracted from the net project cost. The residual value of the project material is calculated by multiplying the original costs of material times the percent of useful life remaining in the respective material.

In equation form the benefit/cost analysis looks like this:

$$\frac{[\text{Transportation Benefits} + \text{Economic Benefits} + \text{Public Benefits}]}{[\text{Net Project Cost} - \text{Residual Value}]} = \frac{\text{B Ratio}}{\text{C}}$$

This ratio must be greater than one in order for the project to be eligible for funding.

Investment Recommendation

The Department evaluates the desirability of all investment options by focusing on whether a long-term solution would be achieved for the service problems identified in the line issue statement. Specifically, external factors influencing the viability of the line are evaluated to determine the potential success or failure of the investment options. Based on all available information a recommendation is made.

THE BENEFIT-COST METHODOLOGY: LOCAL RAIL FREIGHT ASSISTANCE (LRFA)

General. The following sections present, in a step by step fashion, the benefit-cost methodology to be used for analyzing LRFA projects. Generally, the data underlying the benefit-cost analysis must be reasonably current. Data over three years old will not be considered valid, except where:

1. It is a part of a historical time series of data that has an end date within three years prior to submission of the data; or
2. An explanation accompanies submission of the data as to why it can reasonably be expected to reflect current conditions.

A benefit-cost analysis of a candidate LRFA project must include the following steps:

1. Establishing the project alternative;
2. Determining the project costs;
3. Determining the nul alternative;
4. Using the standard planning horizon;
5. Using the FRA published discount rate;
6. Calculating transportation efficiency benefits;
7. Calculating secondary benefits;
8. Calculating salvage value;
9. Calculating the benefit-cost ratio.

Each of these steps is discussed in detail in the sections which follow.

Establishing the project alternative. The analysis must identify the problem, determine the possible solutions to each other and choose which one (or more) to define as a "project" for purposes of performing the benefit-cost analysis or analyses. The project must meet one of the statutory eligibility criteria which are (1) acquisition of a line of railroad or other rail property, (2) rehabilitation or improvement of rail properties, or (3) construction of rail or rail-related facilities.

Determining the project costs. In most cases, the project cost will be equal to the cash and in-kind outlays used to build and implement the project, exclusive of financing costs. Since the analysis is from a public perspective, the source of funds or the financing arrangements have no bearing on the project cost. It is important to include the costs covered by shares paid in such costs are discounted to a present value.

Determining the null alternative. The null alternative represents the Department's best estimate as to what will happen if the project is not undertaken, and is the alternative against which any candidate project must be compared in the benefit-cost analysis.

Using the standard planning horizon. This is the number of years over which the benefits and costs of the project will be considered. The FRA has determined that for local rail freight assistance projects, the appropriate planning horizon is ten years; and, that horizon is to be used in all benefit-cost analyses in support of project applications.

Using the FRA published discount rate. The discount rate to be used each year in benefit-cost analyses is published annually by the FRA after funds for the Local Rail Freight Assistance Program have been appropriated.

The published discount rate will be based upon the Federal Government's cost of borrowing (determined by the interest rate on 10 year obligations) less that element of the cost of borrowing that is estimated to represent expectations as to inflation.

Because the discount rate to be used will not include an inflation component, all forecasts of cost and benefits included in the analysis are to be in constant dollars.

Calculating transportation efficiency benefits. Transportation efficiency benefits are those which are a direct effect of the project alternative being considered. Much of the information used to calculate transportation efficiency benefits must, of necessity, be provided by railroads and/or shippers. To the extent permissible under law, any information considered commercially sensitive will be protected. any information submitted with or as part of a

benefit-cost analysis which the Department wants to be treated confidentially will be clearly and specifically so identified.

Calculating Secondary Benefits. Secondary benefits are those which are an indirect consequence of the project alternative being evaluated and normally reflect temporary alternative rather than allowing the null alternative to occur. The analysis should identify secondary benefits and quantify them for each year in the planning horizon, including all offsets. If in the course of searching for and identifying secondary benefits, it is determined that they do not warrant consideration, then they will not be quantified and included in the analysis. However, a statement to that effect will be included.

In calculating secondary benefits, the Department will take a statewide and not a local perspective. Thus, for example, if a plant is expected to close as a result of a rail line abandonment, it is important to know what alternatives the plant's owner might pursue, if any. If the owner intends to relocate that plant's production to another part of the state, then the local employment and other impacts will not be included in the analysis, since they will be offset at the new location. If the owner intends to relocate out of state, then these impacts should be included. This pertains also to any tax revenues lost to the state or local community as a result of the plants relocating out-of-state. In either case, the business relocation costs should be included in the analysis.

Calculating salvage value. The salvage value for the last year in the planning horizon should be calculated. In cases where the value of the entire line was used in the project cost, the salvage value of all materials in the line, i.e., the line's net liquidation value, would be used here. If the project cost represents only those capital improvements put in place by the project, it is the salvage value of only those capital improvements that would be used here.

Calculating the benefit-cost ratio. Using the FRA published discount rate, calculate the present value of the benefits. The sum of the present values of the benefits should then be divided by the project cost to determine the benefit-cost ratio. In the case of a phased project, the present value of future project costs should be added to current year costs.

ILLINOIS RAILROADS AND ABBREVIATIONS

| <u>Railroad</u> | <u>Abbreviation</u> |
|--|---------------------|
| Alton & Southern Railway | ALS |
| Belt Railway Company of Chicago | BRC |
| Bloomer Shippers Connecting Railroad Co. | BLOL |
| Burlington Northern Santa Fe | BNSF |
| Chicago, Central & Pacific Railroad | CC |
| Chicago-Chemung Railroad Co. | CCRC |
| Chicago & Western Indiana Railroad | CWI |
| Chicago Heights Terminal Transfer Railroad | CHTT |
| Chicago Rail Link ^{1/} | CRL |
| Chicago Short Line Railway | CSL |
| Chicago, South Shore & South Bend Railroad ^{2/} | CSS |
| Chicago, West Pullman & Southern Railroad | CWP |
| Consolidated Rail Corporation (Conrail) | CR |
| CP Rail System | CPRS |
| Crab Orchard & Egyptian Railroad | COER |
| CSX Transportation, Inc. ^{3/} | CSXT |
| Eastern Illinois Railroad Co. | EIRC |
| East St. Louis Junction Railroad | EJR |
| Egin, Joliet & Eastern Railway | EJE |
| Gateway Western Railroad | GWWR |
| Illinois Central Railroad | IC |
| Illinois Midland Railroad, Inc. | I&M |
| Indiana Harbor Belt Railroad | IHB |
| Indiana Hi-Rail Corp. | IHRC |
| Indiana Railroad | INRD |
| Iowa Interstate Railroad, Ltd. | IAIS |
| Joppa and Eastern Railroad | JE |
| Kankakee, Beaverville & Southern Railroad | KBSR |
| Kaskaskia Regional Port District Railroad | KPRD |
| Keokuk Junction Railway | KJRY |
| Lincoln and Southern Railroad Company | L&S* |
| Manufacturers' Railway | MRS |
| Manufacturers Junction Railway | MJ |
| Norfolk Southern Railway Co. ^{4/} | NS* |
| Peoria and Pekin Union Railway | PPU |
| Peoria, Peoria Heights & Western Railroad | PPW |
| Shawnee Terminal Railway Company | STR |
| Shelbyville Industrial Rail Spur | SIRS |
| Toledo, Peoria and Western Railway Corp. | TPW |
| Terminal Railroad Association of St. Louis | TRRA |
| Union Pacific Railroad ^{5/} | UP |
| Vandalia Railroad Company | VRR |
| Wisconsin & Calumet Railroad | WICT |
| Wisconsin Central Ltd. ^{6/} | WC |

* These corporations do not operate lines in the state, but own the land and track over which various railroads operate, or own out-of-service lines.

- ^{1/} Purchased by CWP.
- ^{2/} The Northern Indiana Commuter Transportation District (NICTD) owns and operates passenger service over some of the lines of the CSS.
- ^{3/} CSX Transportation in Illinois encompasses the lines and operations of the former Seaboard System Railroad (owner of the LN) and B&O.
- ^{4/} Lines formerly shown as NW and SOU
- ^{5/} Union Pacific Railroad incorporates lines and operation of the Missouri Pacific Railroad, the Chicago North Western, the SPCSL Corporation, Southern Pacific Railroad, and the Saint Louis Southwestern.
- ^{6/} Purchased by Illinois Central

